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ABSTRACT

One of the major responsibilities of school psychologists is assessment, one goal of which is to provide services for children who need assistance in meeting the demands of the student role. Mercer (1977) points out that the student role includes two dimensions (social and cognitive), that student success depends upon progress in both dimensions, and that both dimensions need to be assessed. Traditionally, school success has been measured primarily in terms of achievement. Until recently there have been few measures of the social dimension. Mercer and Lewis' Adaptive Behavior Inventory for Children (ABIC) is a new scale which does assess children's social development through subscales reflecting six social spheres: family, community, peers, school, earner/consumer, and self-maintenance. Inter-correlations between the WISC-R, ABIC, and achievement can fruitfully be examined in the light of racial-ethnic groups and socioeconomic status. (Author)

Relationships Between the ABIC, WISC-R and Achievement[1]

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As school psychologists one of our major responsibilities is assessment, one goal of which is to identify and provide services for children who need assistance in meeting the demands of the student role. Mercer (1977) points out that the student role includes two dimensions (cognitive and social), that student success depends upon progress in both dimensions and that both dimensions need to be assessed. Traditionally, school success has been measured primarily in terms of achievement. Individual IQ tests (i.e., WISC-R) often are used to assess the cognitive dimension. Until recently there have been few measures of the social dimension. Mercer and Lewis' Adaptive Behavior Inventory for Children (ABIC) is a new scale which does assess children's social development through subscales reflecting six social spheres: Family, Community, Peers, School, Earner/Consumer, and Self Maintenance. Scores on these six subscales are combined to produce an ABIC average. Because of its eventual use in schools, we are interested in understanding the psychometric characteristics of the ABIC.

Intercorrelations between the WISC-R, ABIC, and achievement enable us to determine the independence of the WISC-R and ABIC as cognitive and social measures and to evaluate their relationships with school achievement. Because of possible variations in relationships when exploring different subgroups, this study reports intercorrelations for our total sample, each racial-ethnic group, for the two socioeconomic status (SES) groups and for the six racial ethnic by SES groups. Whenever possible, our findings will be compared with those reported by Mercer (1977).

Achievement scores in reading and math from the California Achievement Test are used as a measure of school achievement. Mercer used student grade point averages (GPA) and teacher judgments of academic competence as measures of school achievement. While correlations between the WISC-R and an achievement test might be enhanced by the similarity of the testing process, the greater reliability and validity of this standardized measure over teacher ratings, in our judgment, justifies its use. We do recognize that the most appropriate criterion for achievement may be a matter of dispute.

WISC-R -- Achievement Correlations[2]

Correlations between Full Scale IQ and achievement for the total sample are .70 for reading and .66 for math, while those for the three racial-ethnic groups range between .62 and .71 for reading and .58 and .65 for math (Table 1). The correlations are slightly higher for Anglos than for Blacks and Mexican Americans. Mercer's correlations ranged from .20 to .49, with the Anglo correlation higher than that for Blacks and Mexican Americans (Table 2).

Correlations from the WISC-R Verbal and Performance for the three racial-ethnic groups range from .44 to .70. These correlations are considerably higher than those found by Mercer, which range from .15 to .51. Mercer again found substantially higher IQ-achievement correlations for Anglos.

[1] Presented at the Annual Convention of the American Psychological Association, San Francisco, August, 1977.

[2] See Oakland (1977) for a more complete discussion of methodology.

The IQ generally predicts achievement equally for low and middle SES children. Correlations continue to be fairly equal for lower and middle SES children within Anglo and Mexican American groups. There is a substantial difference for Blacks; low SES Blacks display the highest IQ-achievement correlation for any group (.77 and .70) while middle SES Blacks produce the lowest correlation (.48 and .45) of any subgroup.

ABIC-Achievement Correlations

Correlations between the ABIC Total and achievement for our total sample is .25 for reading and .21 for math (Table 3). Considerable differences exist between ethnic groups. The approximate correlations are .35 for Anglos, .20 for Blacks and .05 for Mexican Americans. For both the Blacks and Anglos the low SES group correlations are higher (.30) than the middle SES group (.10).

As might be expected, the school subscale of the ABIC is consistently the most highly correlated subscale with achievement, ranging from .18 for Mexican Americans to .45 for Anglos.

ABIC-WISC-R Correlations

The proposal to use both the ABIC and the WISC-R in assessing children (Grossman, 1973) suggests the need to determine their interrelationships. The Full Scale IQ correlation for the total sample (.28) is twice the size of the correlation reported by Mercer (.13) (Table 4). Correlations between the ABIC subscales and Full Scale IQ for our total sample range from .15 to .29 (as compared to Mercer's correlations of .09 to .17). Correlations again differed for racial-ethnic groups: Anglos, .31; Blacks, .21; and Mexican Americans, .27. Correlations for low SES Anglos and Blacks are higher than those for their middle SES counterparts; the reverse occurs for Mexican Americans.

Summary

In summary, the following five observations can be drawn from our data.

IQ-achievement correlations are relatively high, accounting for almost 50% of the variance for our total sample. There are some subgroup differences, but except for differences between low and middle SES Blacks, these differences are not large. Our data supports the use of the WISC-R as a predictor of school achievement.

The ABIC, as expected, does not correlate strongly with school achievement. The highest correlation was for Anglos and accounts for only 13% of the variance in achievement scores. Our data indicates virtually no relation between the ABIC and achievement for Mexican Americans. Which variables to use as criteria of school success and against which the ABIC is validated remains a question; school longevity is one possibility (Mercer, 1977).

Most of the ABIC-IQ correlations are statistically significant but not large enough to be very meaningful in a practical way. For the total group the variance accounted for is only about 8%. The two measures are fairly independent.

While the magnitude of the ABIC-achievement and ABIC-IQ correlations generally are low, differences between SES and racial-ethnic groups are apparent and warrant attention. For example, there seems to be a pattern wherein the correlations for lower SES Anglos and Blacks tend to be higher than those for their middle SES counterparts.

There are some discrepancies in the magnitude of relationships found in our study and Mercer's, although correlations were consistently in the same direction.

REFERENCES

Grossman, H. Manual on terminology and classification in mental retardation. Washington, D.C.: American Asscciation on Mental Deficiency, 1973.

Mercer, J. System of Multicultural Pluralistic Assessment Conceptual and Technical Manual. Riverside, CA: University of California, Riverside, 1977.

TABLE 1

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MEANS, (STANDARD DEVIATIONS), AND INTERCORRELATIONS FOR SIX VARIABLES*

BY TOTAL, RACIAL-ETHNIC, AND SES GROUPS

TOTAL (N=345)

		1	2	3	4	5	6
1	97 (15)			p for all $r_s \leq .001$			
2	100 (15)	66					
3	98 (15)	92	89				
4	47 (11)	29	22	28			
5	50 (30)	71	54	70	25		
6	51 (30)	64	55	66	21	80	

SES

		1	2	3	4	5	6	
MIDDLE SES (N=196) 1	103 (14)		61	91	17	62	57	89 (13)
2	105 (15)	59		88	15	48	49	94 (13)
3	104 (14)	90	88		18	62	59	91 (12)
4	49 (11)	28	19	26		21	15	44 (12)
5	61 (27)	66	45	63	19		76	35 (27)
6	61 (28)	58	46	59	16	76		38 (27)

LOWER SES (N=149)

ANGLO TOTAL (N=136)

		1	2	3	4	5	6
1	104 (16)						
2	106 (14)	56		p for all $r_s \leq .001$			
3	106 (15)	91	85				
4	48 (11)	31	23	31			
5	62 (30)	70	53	71	37		
6	62 (31)	61	53	65	31	80	

ANGLO SES

		1	2	3	4	5	6	
MIDDLE SES (N=88) 1	111 (12)		58	90	20	50	45	92 (14)
2	110 (13)	34		87	22	47	55	99 (14)
3	112 (12)	83	79		23	55	56	94 (14)
4	51 (9)	07	02	06		30	23	43 (11)
5	75 (21)	58	34	58	10		70	38 (30)
6	73 (24)	46	33	49	09	77		43 (30)

LOWER SES (N=48)

1 WISC-R Vocabulary
2 WISC-R Performance
3 WISC-R Full Scale
4 Adaptive Behavior Inventory for Children Scale Score
5 Reading Achievement Percentile Score
6 Math Achievement Percentile Score

BLACK TOTAL (N=117)

		1	2	3	4	5	6
1	93 (13)						
2	95 (14)	64	p for all $r_s \leq .01$				
3	93 (13)	90	90				
4	47 (11)	23	17	21			
5	43 (28)	66	47	62	21		
6	43 (26)	57	49	58	20	76	

MEXICAN AMERICAN TOTAL (N=92)

		1	2	3	4	5	6
1	92 (14)		p for all $r_s \leq .01$ except for $r_{4,5} = .21$, $r_{4,6} = .33$				
2	98 (13)	71					
3	95 (14)	94	91				
4	44 (13)	25	23	27			
5	41 (27)	67	47	62	08		
6	46 (29)	64	44	60	04	78	

1 WISC-R Vocabulary
2 WISC-R Performance
3 WISC-R Full Scale
4 Adaptive Behavior Inventory for Children Scale Score
5 Reading Achievement Percentile Score
6 Math Achievement Percentile Score

BLACK SES

MIDDLE SES (N=63) / LOWER SES (N=54)

		1	2	3	4	5	6	
1	96 (12)		68	92	23	78	65	89 (12)
2	98 (14)	56		91	32	62	64	91 (12)
3	96 (13)	87	89		29	76	70	89 (12)
4	47 (11)	26	08	17		30	29	47 (11)
5	48 (27)	53	32	48	13		81	38 (28)
6	47 (25)	46	34	45	12	69		38 (27)

MEXICAN AMERICAN SES

MIDDLE SES (N=45) / LOWER SES (N=47)

		1	2	3	4	5	6	
1	99 (13)		55	90	10	54	59	86 (11)
2	103 (14)	72		86	05	37	19	94 (11)
3	101 (14)	94	91		09	52	45	89 (10)
4	46 (12)	36	35	38		00	-07	43 (13)
5	53 (26)	61	37	54	07		80	29 (22)
6	58 (28)	53	44	54	05	67		34 (24)

TABLE 2

Correlations Between the WISC-R and Achievement[1]

for Three Racial-Ethnic Groups from

Austin and California

Achievement	Verbal Score		Performance Score		Full Scale Score	
	Austin	California	Austin	California	Austin	California
Anglo	.70/.61	.46	.53/.53	.30	.71/.65	.44
Black	.66/.57	.33	.47/.49	.17	.62/.58	.27
Mexican American	.67/.64	.27	.47/.44	.16	.62/.60	.24

[1]Grade Point Average was the criterion for school achievement in the California data. Entries representing California scores are median values of correlation taken in three successive years.

Scores on the California Achievement Test were used to represent school achievement in the Austin data. Each entry includes two scores: the first correlation is with reading achievement and the second with math achievement.

TABLE 3

ABIC Total and Subscale Correlations with Reading and Math Achievement[1] (Austin)

	Family	Community	Peers	School	Earner/ Consumer	Self-Maintenance	Total ABIC
Anglo							
Total	28/22	32/31	25/16	45/34	24/17	26/29	37/31
Low SES[2]	24/18	17/13	17/16	41/25	20/05	27/33	30/23
Middle SES	04/01	08/15	04/-09	16/13	12/12	04/09	10/10
Black							
Total	14/20	13/13	22/19	28/25	15/17	27/28	21/19
Low SES	17/27	17/18	34/21	35/27	25/26	31/35	30/29
Middle SES	09/12	10/09	13/19	22/24	04/07	25/24	13/12
Mexican American							
Total	-02/-06	05/-02	0/-04	18/18	14/07	11/11	09/04
Low SES	-04/-12	-13/-20	0/-14	08/06	03/-05	12/11	0/-07
Middle SES	-11/-13	06/-01	0/05	19/21	17/09	04/06	07/05
SES							
Low	13/11	9/03	18/07	29/17	17/11	26/27	21/15
Middle	08/06	16/15	10/07	25/24	18/16	18/18	19/16
Total	17/14	20/17	17/10	32/27	22/18	24/24	25/21

[1] Scores on the California Achievement Test were used to represent school achievement. Each entry includes two scores: the first correlation is with reading achievement and the second with math achievement.

[2] SES signifies socioeconomic status

TABLE 4

Correlations Between the WISC-R and ABIC for

Austin and California

ABIC	Verbal Score		Performance Score		Full Scale Score	
	Austin	California	Austin	California	Austin	California
Family	.19	--	.18	--	.20	--
Community	.25	.14	.18	.06	.24	.11
Peers	.14	.18	.14	.11	.15	.16
School	.32	.19	.21	.13	.29	.17
Earner/Consumer	.27	.11	.23	.05	.28	.09
Self-Maintenance	.22	.16	.20	.11	.23	.15
Total ABIC	.29	.15	.22	.09	.28	.13